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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,773	12/07/2005	Yorinobu Kunimune	8008-1077	5941

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EXAMINER

CHAN, EMILY Y

ART UNIT PAPER NUMBER

2829

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/559,773	KUNIMUNE, YORINOBU	
	Examiner	Art Unit	
	Emily Y. Chan	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6 and 7 is/are rejected.
- 7) ☒ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/7/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the continuation data that this application is a 371 of PCT/JP03/12389 filed on 09/29/03 is not mentioned in the specification.

Appropriate correction is required.

Drawings

2. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (Fig. 5) in view of Manabe Tsutomu Japan Publication No. 2002214112 and Bottcher et al US Publication No. 2004/0100293.

With respect to claim 1, The applicant's admitted prior art (Fig. 5) expressly discloses a scanning probe inspection apparatus for detecting anomalies in a passive element out of a plurality of passive elements connected together to form a chain pattern intermittently exposing portions of said chain pattern to a surface of a chip as claimed, comprising a bias voltage supplier, a probe (6) and a scan section.

The applicant's admitted prior art (Fig. 5) does not disclose (1) two probes arranged at a spacing determined by a distance between said exposed portions of said pattern, (2) that the bias voltage supplier (5) for supplying the bias voltage between both ends of said chain pattern and (3) a detector for detecting a potential difference between said two probes.

As to (1) above, Manabe Tsutomu ('112) discloses a scanning probe microscope for operating a micro-material (see Abstract). Manabe Tsutomu ('112) exclusively teaches that his a scanning probe microscope comprising two probes (10a, 10b).

As to (2) and (3) above, Bottcher et al ('293) disclose a test structure (see Fig. 7) comprising a bias voltage supplier (voltage source 703) and a detector (voltmeters 705,706,707). Bottcher et al ('293) exclusively teach that their bias voltage supplier (voltage source 703) supplies voltage between both ends of lines (711 and 714) and the detector (voltmeters 705,706,707) detects a potential difference between two probes (see page 6, paragraph (0055) " to measure potential difference between probe pads").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to be motivated to incorporate the two probe of Manabe Tsutomu ('112) and the voltage supply with the detector of Bottcher et al ('293) into the applicants' admitted prior art because Manabe Tsutomu ('112) discloses that his scanning probe microscope is capable of operating a micro-material having the size below 100nm (see abstract) and Bottcher et al ('293) disclose that their system allows investigation of electromigration effects in conductive connection (see Col. 1, paragraph (0010)).

With respect to claim 3, The applicant's admitted prior art (Fig. 5) discloses that passive elements are through-holes (2) and wherein said through holes (2) are coupled to one another such that one upper interconnect line (4) is coupled to an upper end of one through-hole out of adjacent through-holes and one lower interconnect line (3) is coupled to a lower end of said one through-hole out of adjacent through-holes.

4. Claims 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Manabe Tsutomu ('112) and Bottcher et al ('293) as applied to claims 1 and 3 above, and further in view of Arnold et al US Patent No. 2003/0062915.

The applicant's admitted prior art in view of Manabe Tsutomu ('112) and Bottcher et al ('293) do not specific that the probe is shaped with different portions and is coated with a conductive material.

Arnold et al ('915) disclose a probe (see Fig. 3) comprising a thin plate shaped base portion (31), a lever (32) extending from the base portion and a needle portion.

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Arnold et al ('915) also disclose that the probe is formed by coating with a conductive material (see page 2, paragraph (0023) lines 4-6)). Furthermore, Arnold et al ('915) disclose that the conductive material can be diamonds (see page 1, paragraph (0012) line 10 "such as diamonds").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate the teaching of Arnold et al ('915) into the applicants' admitted prior art in view of Manabe Tsutomu ('112) and Bottcher et al ('293)'s apparatus for the expected benefit of allowing fabrication of very small, highly reliable contact devices capable of repeated use as disclosed by Arnold et al ('915) (see page 2, paragraph (0023) lines 6-7).

Allowable Subject Matter

5. Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 2 and 5 are indicated allowable because the prior art in the record do not teach or suggest that the two probes are spaced from each other a distance equal to or greater than twice said given pitch of said plurality of passive elements recited in claim 2 and the needle is so formed as to be inclined from said distal end of said lever in a direction that said distal end points recited in claim 5.

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6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hamamura et al (522) disclose a device for test wafers (see Figs) comprising two scanning probes.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EC
5/13/06


VINH NGUYEN
PRIMARY EXAMINER
A-4. 2829
05/15/06